

**Abstract**

Systems and Methods are provided for relaying wireless signals bi-directionally between user equipment (UE) and base station transceivers (BTS). Various slot types are defined during which a relay node takes on the personality of either the UE or the BTS. In order to implement the relay node with a single transceiver chain, a first switching matrix is used to switch high band and low band RF bandpass filters between receive and transmit paths, and a second switching matrix is used to switch two frequency sources between the receive and transmit path. In this way, a single receive path can function both in the UE and BTS personality, as can the single transmit path.